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June 24, 2004

RECEIVED

Ms. Marlene H. Dortch  
Federal Communications Commission  
Office of the Secretary  
445 12th Street SW  
Washington, D.C. 20554

JUN 30 2004

Federal Communications Commission  
Office of the Secretary


Re: *Ex Parte* Submission in Docket MB 04-64, In the Matter of Digital Output Protection  
Technology and Recording Method Certifications:  
Digital Transmission Content Protection

Dear Ms. Dortch:

Pursuant to a telephone conversation on June 21, 2004, with Rick Chessen, Susan Mort and William Johnson of the Media Bureau, on behalf of the Digital Transmission Licensing Administrator, LLC ("DTLA"), submitted herewith are copies of the informational versions of the Supplements for Bluetooth and IEEE1394-similar transports to the Specification for the DTCP digital transmission content protection technology. These versions exclude confidential and trade secret material, but are otherwise complete and up to date. As noted in the Certification submitted in this Docket by DTLA, informational versions of the Specification have been and continue to be available for downloading from the DTLA website, [www.dtcp.com](http://www.dtcp.com). They are being submitted for the convenience of the Commission and the completeness of the record of this proceeding.

Should the Commission have any questions or require any additional information, please do not hesitate to contact me at your convenience.

Very truly yours,

  
Seth D. Greenstein

Enclosure

cc: Rick Chessen  
William Johnson  
Susan Mort

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# DTCP Volume 1 Supplement C Mapping DTCP to Bluetooth (Informational Version)

*Hitachi, Ltd*

*Intel Corporation*

*Matsushita Electric Industrial Co., Ltd.*

*Sony Corporation*

*Toshiba Corporation*

***Revision 1.0***

***April 26, 2004***

## **DTLA Confidential**

## Preface

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## Volume 1 Supplement C DTCP Mapping to Bluetooth

### V1SC.1 Introduction

This supplement describes the mapping of DTCP onto the Bluetooth. All aspects of IEEE 1394 DTCP functionally are preserved and this supplement details Bluetooth DTCP specific changes or additions.

#### V1SC.1.1 Related Documents

This specification shall be used in conjunction with the following publications. When the publications are superceded by an approved revision, the revision shall apply.

- Digital Transmission Content Protection Specification
- Bluetooth SIG, Inc. specifications:
  - Audio/Video Distribution Transport Protocol Specification Revision 1.0
  - Bluetooth Assigned Numbers
  - Advanced Audio Distribution Profile
  - Generic Audio/Video Distribution Profile

#### V1SC.1.2 Terms and Abbreviations

AVDTP	Audio/Video Transport Layer Protocol Specification 1.0

## V1SC.2 Modifications to Chapter 6 (Content Channel Management and Protection)

### V1SC.2.1 Exchange Key Expiration

Sources of protected content expire their Exchange Keys when all AVDTP connections are released.

### V1SC.2.2 Content Encryption Format

DTCP prefixes a one byte header to the Media payload and encrypts both and then again affixes another two byte header as shown in following figure.

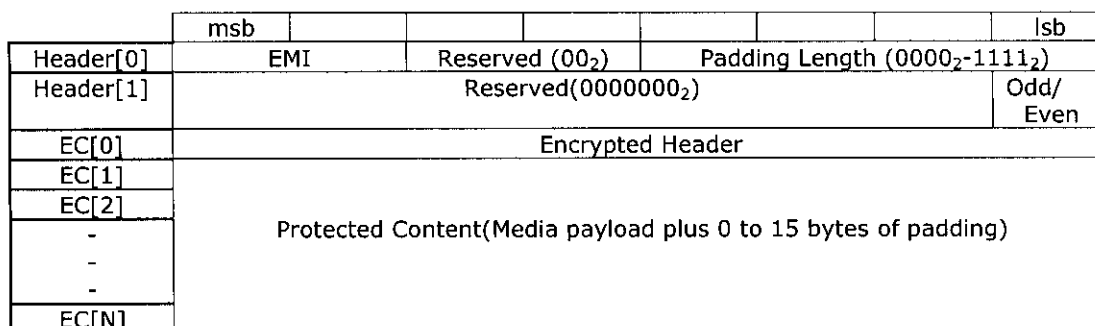


Figure 1 Protected Content Packet

**Header [0..1]:** This field is used to carry the bits described in Sections 6.3.3 "Odd/Even Bit" and 6.4.2 "Encryption Mode Indicator (EMI)" and Padding Length which specifies the length of the padding affixed to Media payload.

**EC[0]:** The Encrypted Header (EH) consists of at least 1 byte and is used as depicted in following

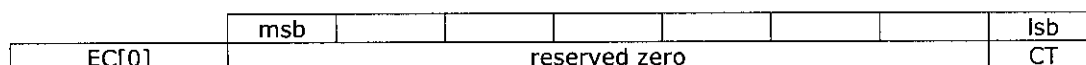


Figure 2 Encrypted Header

**CT (Content Type):** specifies the treatment of EMI/Embedded CCI for the Media Payload in the PCP and the value of which are described in following table:

CT	Definition	Meaning
0 <sub>2</sub>	Audiovisual Content	Rules for audiovisual device functions described in Section 6.4.4 are applied
1 <sub>2</sub>	Audio Content	Rules for audio device functions described in Section 6.4.5 are applied

Table 1 Content Type

**EC[1..N]:** is the encrypted form of the Media payload with padding.

When M6 is used to protect payload it can range from 7 to 65520 bytes in length and padding is affixed when payload length is less than 7 bytes.

When AES-128 is used to protect payload it can range from 15 to 65520 bytes in length and padding is affixed when payload length is less than 15 bytes.

### **V1SC.3 Embedded CCI**

Embedded CCI is carried as part of the content stream. Many content formats including MPEG have fields allocated for carrying the CCI associated with the stream. The definition and format of the CCI is specific to each content format. Information used to recognize the content format should be embedded within the content.



## V1SC.4 Modifications to Chapter 8 (AV/C Digital Interface Command Set Extensions)

### V1SC.4.1 Control Packet Format

This section maps the AKE control command specified in Section 8.3.1 to the Bluetooth AVDTP\_SECURITY\_CONTROL\_CMD and AVDTP\_SECURITY\_CONTROL\_RSP. The AKE control command sub fields used with Bluetooth have the same values and functions as detailed in Chapter 8.

	msb						lsb
Control[0]	reserved (zero)				ctype/response		
Control[1]	category - 0000 <sub>2</sub> (AKE)				AKE_ID		
Control[2]	subfunction						
Control[3]	AKE_Procedure						
Control[4]	exchange_key						
Control[5]	subfunction_dependent						
Control[6]	AKE_Label						
Control[7]	number				status		
Control[8]	Byte Length N of AKE_Info Field						
Control[9]							
AKE_Info[1]	AKE_Info						
-							
-							
AKE_Info[N]							

**Figure 3 Bluetooth DTCP Control Packet Format**

- Control bytes 0, 8, and 9 are used to map DTCP to Bluetooth.
- Ctype has the same values as referenced in chapter 8 of DTCP specification and specified by the AV/C Digital Interface Command Set.
- Control bytes 1..7 are identical to operand bytes 0..6 as specified in section 8.3.1.
- The AKE\_Info field is identical to the data field specified in section 8.3.1.

### V1SC.4.2 Status Packet Format

This section maps the AKE status command specified in Section 8.3.2 to the Bluetooth AVDTP\_SECURITY\_CONTROL\_CMD and AVDTP\_SECURITY\_CONTROL\_RSP. The AKE status command sub fields used with Bluetooth have the same values and functions as detailed in Chapter 8.

	msb						lsb
Control[0]	reserved (zero)				ctype/response		
Control[1]	category = 0000 <sub>2</sub> (AKE)				AKE_ID = 0000 <sub>2</sub>		
Control[2]	subfunction						
Control[3]	AKE_Procedure						
Control[4]	exchange_key						
Control[5]	subfunction_dependent						
Control[6]	AKE_Label = FF <sub>16</sub>						
Control[7]	number = F <sub>16</sub>				status		

Figure 4 Status Packet Format

- Control byte 0 is used to map DTCP to Bluetooth.
- Ctype has the same values as referenced in Chapter 8 of DTCP specification and specified by the AV/C Digital Interface Command Set.
- Control bytes 1..7 are identical to operand bytes 0..6 as specified in Section 8.3.2.
- The maximum data field query supported by exchanging values via the **data\_length** field and described in the last paragraph of section 8.3.2 is not needed, as it is supported low level AVDTP.

### V1SC.4.3 CONTENT\_KEY\_REQ subfunction

In section 8.3.4.6, isochronous\_channel\_number field is replaced with the ACP SEID value.

### V1SC.5 Bluetooth Information (Informative)

AVDTP provides for content protection capability identification and configuration via CP\_TYPE<sup>1</sup> which for DTCP CP\_TYPE is 0001<sub>16</sub>.

<sup>1</sup> Bluetooth SIG, Bluetooth Assigned Numbers, [http://www.bluetooth.org/foundry/assignnumb/document/assigned\\_numbers](http://www.bluetooth.org/foundry/assignnumb/document/assigned_numbers)

# DTCP Volume 1 Supplement D DTCP use of IEEE1394 Similar Transports (Informational Version)

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## **Volume 1 Supplement D DTCP use of IEEE1394 Similar Transports**

### **V1SD.1 Introduction**

This supplement describes adaptation of DTCP onto the links similar to IEEE1394. All aspects of IEEE 1394 DTCP functionally are preserved and this supplement only describes additional remarks and information for adapting DTCP to each interfaces.

### **V1SD.2 OP i.LINK<sup>1</sup>**

#### **V1SD.2.1 Related Documents**

This specification shall be used in conjunction with the following publications. When the publications are superceded by an approved revision, the revision shall apply.

- Digital Transmission Content Protection Specification Volume 1 and Volume 2
- Sony Corporation & Sharp Corporation, OP i.LINK Specification Version 1.0, March 28, 2001

#### **V1SD.2.2 Adapting DTCP to OP i.LINK**

There is no additional remark and information for adapting DTCP to OP i.LINK.

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<sup>1</sup> The URL for the OP i.LINK web site is: <http://www.opilink.org/>.